

**Abstract**

As requested by the Examiner, a new abstract has been submitted on a separate sheet. Please substitute the abstract in the application with the abstract on the following page.

**Abstract**

A method for inferring the shape and dimension of arrays for high-level, array-based languages such as MATLAB is presented. The method uses the algebraic properties that underlie MATLAB's shape semantics and infers the shape that the program expression assumes. In one embodiment, a shape-tuple of the result of a program expression is inferred by creating a shape-tuple expression comprising the shape-tuples of the operands and the shape-tuple operator.